CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

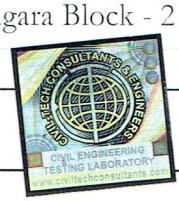
JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/WNo.17/KS/BM/Gradation/2014-15 03.05.2014

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CLIENT	**Asst. Executive Engineer,** Yeshwanthapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. K. Shivakumar,** Contractor, Bangalore.
NAME OF THE WORK	Providing and laying HDPE Water line in Mutyalanagara Block - 2 in JP Park, Ward No. 17, BBMP, Bangalore.
REFERENCE	EE/RRND/Wo. No./234/2013-14 Dated: 07.02.2014
SAMPLE I/D	HDPE Water line in Mutyalanagara Block - 2 in JP Park, Ward No. 17
DATE OF TESTING	03.05.2014



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	26.35	5.47	5.47	94.53	90-100
13.2	116.48	24.19	29.66	70.34	56-88
4.75	217.62	45.20	74.86	25.14	16-36
2.36	85.96	17.85	92.71	7.29	4-19
0.3	14.57	3.03	95.74	4.26	2-10
0.075	3.85	0.80	96.54	3.46	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	27.45	5.69	5.69	94.31	90-100
13.2	129.68	26.88	32.57	67.43	56-88
4.75	195.74	40.57	73.13	26.87	16-36
2.36	79.68	16.51	89.65	10.35	4-19
0.3	22.15	4.59	94.24	5.76	2-10
0.075	12.36	2.56	96.80	3.20	0-8

Note:

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- The results indicated above are based on the tests carried out on the samples received in the laboratory
- Any Query regarding the report must be reported within 30 days from the date of testing.

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Job No.: CTCE/BBMP/WNo.17/KS/BM/Agg.G/2014-15 03.05.2014

Aggregate Gradation Test

IS : 2386 Part I

Client	**Asst. Executive Engineer,** Yeshwanthapura Sub Division, BBMP, Bangalore.
Agency	**Mr. K. Shivakumar,** Contractor, Bangalore.
Name of the work	Providing and laying HDPE Water line in Mutyalanagara Block - 2 in JP Park, Ward No. 17, BBMP, Bangalore.
Reference	EE/RRND/Wo. No./234/2013-14 Dated: 07.02.2014
Sample ID	Hotmix Plant
Type of Mix	Bituminous Macadam
Date of Testing	03.05.2014

Total Weight of Sample: 5325 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	465	8.73	8.73	91.27	90-100	
13.2	1586	29.78	38.52	61.48	56-88	
4.75	1621	30.44	68.96	31.04	16-36	
2.36	954	17.92	86.87	13.13	4-19	
0.3	368	6.91	93.78	6.22	2-10	
0.075	142	2.67	96.45	3.55	0-8	

Total Weight of Sample: 5450 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	345	6.33	6.33	93.67	90-100	
13.2	1815	33.30	39.63	60.37	56-88	
4.75	1654	30.35	69.98	30.02	16-36	
2.36	825	15.14	85.12	14.88	4-19	
0.3	356	6.53	91.65	8.35	2-10	
0.075	142	2.61	94.26	5.74	0-8	

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QUALITY CONTROL REPORTS FOR

SEMI DENSE BITUMINOUS CONCRETE

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JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No: CTCE/BBMP/WNo.17/KS/SDBC(QB)/2014-15 03.05.2014

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

CLIENT	:	**Asst. Executive Engineer,** Yeshwanthapura Sub Division, BBMP, Bangalore.
AGENCY	:	**Mr. K. Shivakumar,** Contractor, Bangalore.
NAME OF THE WORK	:	Providing and laying HDPE Water line in Mutyalanagara Block - 2 in JP Park, Ward No. 17, BBMP, Bangalore.
REFERENCE	:	EE/RRND/Wo. No./234/2013-14 Dated: 07.02.2014
SAMPLE ID	:	Bitumen
DATE OF TESTING	:	03.05.2014

The results of the tests conducted on the bitumen sample using for Semi Dense Bituminous Concrete.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	65	60 to 70
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	49	Min. 45
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	288	Min. 220

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